TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, February 1, 1909.

The President, Dr. William J. Taylor, in the Chair.

OBSTRUCTION OF BOWEL AFTER REDUCTION OF A STRANGULATED FEMORAL HERNIA.

Dr. Edward B. Hodge reported the history of a woman, aged 59 years, who was admitted Nov. 4, 1908, to the Presbyterian Hospital, in the service of Dr. W. L. Rodman, complaining of abdominal pain and vomiting. For four years she had had a painless lump in the left groin, the size of a walnut. This never disappeared or changed in size. Three days before admission, the lump became painful and a little larger. She began to have abdominal pain, diffuse at first, localized to the epigastrium in the last twenty-four hours. Vomiting appeared early, and lately has occurred every 15 to 20 minutes. It was not fecal. There has been no bowel movement since the attack began. A small mass was felt in the region of the left femoral ring; it was not tender.

A diagnosis of strangulated femoral hernia was made and immediate operation performed.

A two-inch vertical incision exposed the sac of a femoral hernia, containing a loop of dark purple small intestine. The constriction was relieved by several nicks about the circumference of the ring, a few recent adhesions were loosened, and more bowel pulled down. One limb showed a band darker than the rest, ¼ in. wide and two-thirds around the bowel. Under hot moist sponges the circulation returned except in this band and a small spot, ⅛ in. in diameter, an inch or two from it. Acting on a suggestion of Summer's, this suspicious band of gut was invaginated into the healthy intestine by silk Lembert sutures, reinforced by a continuous silk suture. The small area was turned in by a silk purse-string suture reinforced by one or two inter-

rupted sutures. The intestine was replaced in the abdomen, and the wound sutured with interrupted silkworm gut around a cigarette drain. The patient left the table in good condition, with a pulse of 110.

She did well for two days, when vomiting began. This steadily increased, as did distention. No flatus was passed, and on the fourth day distended intestinal coils, with visible peristalsis, could be made out. The pulse began to rise, with normal temperature. Mechanical obstruction was evident. Ninety-six hours after the first operation, the abdomen was opened in the median line above the pubis. There was considerable clear, bloody fluid in the pelvis. Coils of collapsed and of moderately distended small intestine presented. A finger passed to the region of the femoral ring showed no great swelling, but the bowel was adherent to the paries, and there seemed to be a sharp angulation. Acting on Dr. Rodman's suggestion, no attempt at resection was made, but, without disturbing the adhesions, lateral anastomosis was done with clamps between the afferent and efferent loops, as close to the site of the obstruction as allowed easy delivery in the wound; No. 1 chromic gut was used for the inner row of sutures and No. 2 Pagenstecher for the outer. The latter was reinforced at one or two points with interrupted sutures. On removal of the clamps gas passed freely from the afferent to the efferent loop. Gauze in a split rubber tube was used for a drain. The abdomen was closed with through-and-through silkworm gut, and continuous No. 2 chromic catgut in the fascia.

The patient left the table in fair condition and did well thereafter. Flatus was passed in a few hours. The distention steadily lessened and vomiting did not occur. No attempt to move the bowels was made. At the end of a week they moved naturally. Her further convalescence was uneventful.

PERFORATING PYLORIC ULCER.

Dr. John H. Jopson related the history of the following two cases:

Case I, male, aged 43 years, was admitted to the Bryn Mawr Hospital April 13, 1906. He was by occupation a gardener; used tobacco and malt liquors freely. He had suffered for ten or fifteen years from indigestion. Pain and discomfort were present in the epigastric region, most marked about two hours after a

meal. He never vomited, and there was no history of bleeding. He attributed his present attack to the recent ingestion of considerable quantities of porter. On the evening before admission, after eating his supper, and while lying down smoking, he was seized with sudden, severe abdominal pain, which persisted, in spite of treatment during the night; and he was admitted to the hospital at 9 A.M. of the following day.

His temperature on admission was $101^{2}/_{5}°$, pulse 60, respirations 20. He was seen by Dr. Jopson in the evening of the same day in consultation with Drs. Christie and Laird. His general condition was excellent, temperature $99^{3}/_{5}°$, pulse 72, respirations 18. At this time his symptoms were those of acute appendicitis. The pain, tenderness, and rigidity which were present were most marked in the right iliac region. There was moderate tenderness and rigidity in the right hypochondrium, and the possibility of a gastric perforation was considered and discussed; it was considered unlikely, however.

He was operated upon at 8.30 P.M., twenty-four hours after the onset of his acute illness. Right iliac incision. A small quantity of gas escaped on opening the peritoneal cavity, and there was considerable free turbid fluid in the abdomen. The appendix was picked up and found normal. The incision was at once extended upward and the pyloric region explored. Patches of lymph on the intestine were noted in this direction. A small perforation at the pylorus was detected. It was apparently on the stomach side of the pylorus. It was small, not much over pinhead size, circular, and was easily closed by a purse-string suture of silk, reinforced by Lembert sutures. The pelvis was drained by cigarette and glass tube, and the pyloric region by iodoform gauze. The wound was drawn together by several through-and-through silkworm-gut sutures. The patient stood the operation exceedingly well and without shock. His pulse soon fell to below 100, and the temperature remained around 99° and 100° for a couple of days, and was thereafter normal. He was treated in the sitting posture with continuous enteroclysis, and nourished by rectal enemata for several days before mouth-feeding was begun, malted milk, a favorite rectal nutrient at the Bryn Mawr Hospital, being used. He was in the hospital six weeks.

It is now nearly three years since the operation. The man did not resume his usual work for nearly a year, but he has since that time been at active work as a gardener in his old place. He

says he is quite well, except for some tendency to fermentation and gas; eats heartily; smokes heavily; has no pain referred to his stomach. His health is very much better than before his illness, but he has some pain in the right side after stooping or heavy lifting, probably from adhesions.

CASE II.—Male, white, aged 52, was admitted to the Presbyterian Hospital Nov. 21, 1908, with a diagnosis of perforated duodenal ulcer. His previous history showed him to be an active man, of somewhat irregular habits, periodically indulging in alcohol to excess, but not a steady drinker. Uses tobacco to excess. He gives a history of gastric trouble dating back for about twelve years. His symptoms consisted of eructations, gastric pain, and distress before meals and at bedtime, and gastric pain and nausea coming on several hours after a meal, which would be relieved by the taking of food, only to return after three or four hours. Vomiting was often self-induced to relieve gastric distress and hyperacidity. These symptoms have been growing worse for two or three months. There has been no marked loss of weight, and he has been able to attend steadily to his work, which involves considerable walking.

On the day of admission he had submitted to a stomach examination for diagnosis, a stomach-tube being passed by his physician after usual test breakfast, and the following data obtained: Free HCl, 0.26; total acidity, 0.39. Lactic, butyric, and acetic acids absent. Bile absent, and pepsin in normal amount. Microscopic examination showed many starch granules, broken and unbroken, and occasional epithelial cells. A blood examination at this time showed 90 per cent. hæmoglobin, and 4,500,000 red cells, with 8,400 whites. Four hours after the test breakfast he took a lunch of eggs, toast, and tea; and while walking home an hour thereafter was taken with sudden, agonizing abdominal pain and retching. He was unable to proceed, and was taken home in a patrol wagon. He was seen by Drs. Bryan and Turnbull, and later by Dr. W. E. Hughes, who made a diagnosis of duodenal ulcer with perforation. Pain was with difficulty controlled by large doses of morphine. He was admitted to the Presbyterian Hospital at 11.30 P.M. At this time, nine hours after onset of pain, he was in good condition; temperature $98^{3}/_{5}°$, pulse 124. The pain had been partly controlled by morphine. The abdomen was of board-like rigidity, and the upper half very tender, the tenderness most pronounced on the right side. There was no distention. No vomiting, but some retching.

Operation, eleven hours after onset. Right rectus incision. There was immediate escape of gas on opening the peritoneum, followed by free and persistent expulsion of great quantities of turbid fluid which had been confined under pressure in the rigid abdomen. The entire abdominal and pelvic cavities were filled with this exudate. A large ragged opening in the anterior wall of a much infiltrated pylorus was easily found. It admitted the gloved index finger, which easily passed into the duodenum. It could not be stated definitely that the perforation was to the duodenal side of the pylorus, which was deeply fixed in the abdomen. There was much lymph over the pyloric end of the stomach and the duodenum. Owing to the fact that the pylorus was practically torn in half by the ulceration, some uneasiness was experienced as to the possibility of closure by sutures. With care, however, it was successfully and apparently tightly closed by a double layer of Pagenstecher sutures applied in interrupted fashion—the first layer, through-and-through stitches of the edges; and the second, covering in this with Lembert's. The lesser omentum was pulled down over the wound at its upper angle. A suprapubic opening was then made and a glass tube inserted into the pelvis. Tbe peritoneum was thoroughly flushed until clear fluid returned from both wounds. A cigarette drain and two strips of gauze drained the pyloric region, and the upper and lower parts of the wound were sutured. A glass and rubber tube were left in the pelvis.

The patient was not in the least shocked by the operation, his pulse being only 104 when removed from the table. He was placed on the Fowler-Murphy treatment, and nothing given by mouth for 40 hours. He was fed for several days by nutritive enemata, and mouth-feeding started after three days. He was in bed three weeks, and left the hospital at the end of four weeks. He has continued to gain in weight and strength. His diet is now a fairly generous one. He has a little fermentation at times, but has no pain to speak of. He still, at the end of two months, has a narrow sinus in the upper wound.

Dr. Jopson remarked, further, that he had sutured three gastric ulcers which had perforated, all in middle-aged men, and located in or near the pylorus, and all had recovered. As to the exact location of the perforation, and whether it is on the stomach or duodenal side of the pylorus, it is difficult in these perforated cases to state, as Eliot has recently emphasized. The pylorus is often

the site of so much œdema, and is so deeply fixed in the abdomen, that it is frequently impossible to say that an ulcer is on this or that side of the dividing line. The symptoms of the perforation in any event are the same. For the first few hours the localized tenderness and muscle spasm are especially pronounced in the abdominal wall over the site of perforation; but after this, as the infectious material gravitates down along the right side of the abdomen and as the peritoneal inflammation accompanies it, the symptoms in pyloric and duodenal perforation later become those of the usual right iliac inflammation, appendicitis; and hence we find a larger number of cases seen late diagnosed as appendicitis. In his first two cases, seen twenty-four hours or more after perforation, this diagnosis was made. An appendix incision, extended upward sufficiently far, gives good exposure and good drainage of the infected right abdomen. When the perforation is in other portions of the stomach, late cases show, perhaps, only general peritonitis. Some years ago he operated on a case of this type, with advanced general peritonitis, in which the lesion was found only at autopsy.

Of the methods of closure of the perforation little need be said except, as in the last case, in connection with the suture of large perforations, where tamponing, omental flaps and plugs, overlapping by neighboring organs, and even gastrostomy have been suggested, although the last-mentioned has given very poor results. Jejunostomy has been recommended for perforation by Von Eiselsberg, to relieve tension and put the stomach at rest; and he and his associates have so treated 12 cases with 5 recoveries. Excision, pylorectomy, or pyloroplasty have also been recommended and practised. The most vital question is, of course, as to the performance or non-performance of gastro-enterostomy after closure of the ulcer. Moynihan advises it in cases seen early and in good condition; while Eliot, as a result of careful, recent study, advises against it as a primary measure, on account of the slightly greater mortality, and the fact that the after history of these cases shows practically as little danger of recurrence as do cases subjected to primary gastrojejunostomy without perforation. He advises waiting until subsequent (and unusual) symptoms may demand it.

Hemorrhage from, and perforation of other ulcers has occurred both early and late after suture of perforated ulcers, and persistent gastric symptoms have called for secondary and

usually successful operation; but it is true that the majority of cases that recover from the acute attack of perforation remain well without gastro-enterostomy being required. In perforated cases operated upon after twelve hours, few would advise it. Eliot analyzed 51 cases treated by gastro-enterostomy with 33 recoveries and 18 deaths, a mortality of 35.5 per cent., and not a bad showing. Eighty-two cases sutured, without gastro-enterostomy, gave a mortality of 34.1 per cent. Whether gastro-enterostomy is indicated except when suture of the ulcer causes excessive narrowing of the pylorus, is still somewhat of a question. It would seem to be justifiable to surgeons of special experience in cases seen early after perforation and in good condition. He had been much impressed with the absence of shock in his cases. Indeed the operation could have been reasonably prolonged in all three without serious detriment to the patient.

PERFORATED GASTRIC ULCER.

DR. MORRIS BOOTH MILLER related the history of a man, aged 32, who was admitted to the Polyclinic Hospital on October 2, 1908, about seven o'clock in the morning. All the history obtainable at that time was to the effect that at about eleven o'clock the previous night he had been suddenly taken ill with severe pain in the right side of the abdomen followed by moderate vomiting. He was promptly seen by Dr. Henry Tucker and later by Dr. David Riesman, both of whom advised that he be sent to the hospital without delay. This advice was not accepted; but as his condition grew worse during the night he was finally removed to the Polyclinic early in the morning. Prior to operation he was unable to give any account of previous ill health; but during his convalescence he gave them the interesting data that for over a year he had suffered at frequent intervals from epigastric pain, distention, gaseous eructations, and constipation, and that, further, he had been seen during this time by Dr. William E. Hughes, who had diagnosed gastric ulcer and had spoken of operation.

When admitted to the hospital he presented to a striking degree the clinical picture of abdominal disaster. He was pinched, anxious-looking, and blanched, sweating slightly, and evidently in great pain. The temperature was 96 4/5°, pulse 92, respiration 32, The belly walls were sunken, board-like in texture, and the rigidity seemed equal on both sides. He located the maximum of pain on the right side and about the umbilicus. Immediate operation was

undertaken and inasmuch as a provisional diagnosis of acute perforating appendicitis had been made one incision was made in that area. There escaped at once a considerable quantity of turbid fluid containing flocculent particles, but aside from the pervading congestion the appendix was normal. An incision was then made through the upper right rectus, and at once the characteristic sound of air sucking in and out was apparent. With no difficulty the perforation was located on the anterior and under surface of the stomach about one inch from the pylorus. The opening was punched-out, irregular in outline, hardly large enough to admit a pencil and it apparently had occurred not at the centre of but near the pyloric edge of an indurated area about an inch in diameter. One through-and-through suture closed the perforation, and the whole ulcer was turned in with a continuous Lembert suture in the general axis of the stomach. Gastrojejunostomy was considered, but not done, as his condition would hardly warrant it. A rapid search revealed no evidence of other ulcers. An additional opening was made above the pubis for pelvic drainage; and after a quick toilet by mopping, thorough drainage by wicks and split rubber tubes was established at all three incisions.

When sent back to the ward he was placed in a semi-recumbent posture and enteroclysis with normal salt solution was continuously used for nearly a week, with its usual admirable results. Aside from a bronchopneumonia which appeared the next day and which lasted four or five days, his convalescence was uneventful and he was discharged on the twenty-ninth day. He has since been under observation and there has been no recurrence of his former gastric symptoms. This case may be placed on record as having been operated on nine hours after perforation.

Dr. John B. Deaver said that in cases of perforating gastric ulcer the question of diagnosis in many instances is an uncertain one. Many cases of perforation had been diagnosed as appendicitis, but as experience grows richer such errors are less liable to occur. Personally he did a posterior gastrojejunostomy in the majority of instances. He never hesitated on account of the patient's condition, because the operation adds practically nothing to the risk. In these cases of excessive indurations, as in Dr. Jopson's case, it is a safer procedure. The cases that he had been able to follow had been entirely relieved of digestive disturbances, eructation of gas, hyperchlorhydria, etc. He always drained suprapubically, but rarely at the point of attack. He never

flushed the abdomen. Most of his cases had been duodenal, and all had recovered. It is a safe operation certainly within 36 to 48 hours. The percentage of mortality is not large. Posterior gastrojejunostomy was especially indicated in cases where there is much induration and where one cannot be sure about the lumen of the duodenum or of the pylorus, as the case may be.

Dr. John H. Gibbon said that he had had eight cases of perforating duodenal and gastric ulcer with three recoveries, which, according to statistics, is about the average. The mortality rate will depend largely upon the time at which the operation is done after the perforation has occurred. In one of his cases he was fortunate enough to operate within a few hours, and in another within nine hours after perforation, and each of these recovered. In one case, done thirty hours after perforation, the patient died on the twenty-fourth day from a pelvic abscess due to faulty drainage, and in spite of the subsequent drainage of this abscess. All of the cases which had gone over thirty hours before operation died, most of them being very ill from an extensive general peritonitis.

The general practitioner needs to be impressed with the importance of prompt operation in all cases of acute abdominal crises. In his last case, operated upon a few weeks ago, thirty hours had elapsed since perforation and the patient had received a grain of morphine during the previous night for his severe abdominal pain. This greatly masked the symptoms and in this way influenced the fatal result. In the early cases of perforation, where there is little extravasation, or where there is a small opening and none of the contents have escaped, a gastrojejunostomy is contraindicated unless the pylorus is obstructed by the ulcer. Drainage, where extravasation of the gastric and intestinal contents has taken place, and where more than a few hours have elapsed, should be employed, both at the site of perforation and perhaps also suprapubically. He thought that none of the cases which he had lost could have been saved by the additional operation of gastrojejunostomy. This operation in the presence of an extensive peritonitis opens up the lesser peritoneal cavity to infection, and where the patient is in bad condition greatly jeopardizes his chances of recovery. In one case which recovered from an acute perforation, he had to do a gastro-enterostomy eighteen months later for a return of symptoms; but this is not the rule unless the ulcer is situated at the pylorus and produces obstruction.

The secret of success in these cases is the same as in acute appendicitis, namely, early operation. It is not so much a question of technic as it is of getting at the case early. Where a gastro-enterostomy is not done the important point in the postoperative treatment is the keeping of food out of the stomach and feeding the patient by the rectum.

Dr. Robert G. Le Conte did not believe there were many cases of gastric and duodenal perforation which require an immediate gastro-enterostomy. The object of an immediate gastro-enterostomy is to drain the stomach during the period of healing of the ulcer and to afford a new outlet for food, when closing of the perforation has produced a stenosis of the pylorus. The same results, however, may be accomplished for two or three weeks without gastro-enterostomy, by withholding all food from the mouth and feeding the patient by the rectum. Where the ulcer has a large indurated base, and is situated near the pylorus, its closure contracts the pyloric opening; but this contraction is frequently a temporary one, which is relieved as the indurated area is absorbed. In such a condition, then, if gastro-enterostomy is done at the time of closure of the ulcer, the patient is subjected to the immediate risk of an operation prolonged for, perhaps, twenty minutes, and the ultimate probability of a useless opening in the dependent portion of the stomach when the pylorus has returned to its original calibre. He recalled a case of Dr. Gibbon's, where a firm closure of the ulcer could not be secured by direct suture, and an omental patch was used to re-enforce the closure. This case made a perfect recovery without gastro-enterostomy, by withholding all food from the mouth for a period of three weeks. Mayo has twice lately in chronic gastric ulcer deliberately cut out the base of the ulcer with a sharp knife, and then closed the defect, producing the picture of an acute perforation. The immediate results have been most favorable, without a gastro-enterostomy.

As to lavage of the peritoneal cavity in these cases, in peritonitis following appendiceal perforation he did not usually wash the peritoneum; but in a gastric perforation, with the possibility of particles of undigested food having entered the peritoneum, he believed that lavage often does good, for he had in such cases washed out bits of meat and tomato skins which he felt confident would have been a source of trouble had they been allowed to remain within the peritoneal cavity.

DR. ASTLEY P. C. ASHHURST said that two points which had arisen in this discussion were illustrated in an unusual manner in the case of a patient with duodenal perforation on whom he had recently operated at the Episcopal Hospital in the service of Dr. Frazier: first, the differential diagnosis from appendicitis; and second, the question of irrigation and drainage. In the patient under Dr. Ashhurst's care Dr. Frazier had removed the appendix during an acute attack just one year previously; and in the present illness this fact tended to confuse the diagnosis, for the patient was thought to be suffering from intestinal obstruction resulting from his previous operation. On opening the abdomen in the suprapubic region, however, the true condition was manifested by finding fecal matter free in the peritoneal cavity. An incision was then made in the epigastric region, and the perforation (of the duodenum) sutured, about seven hours after perforation occurred. A culture from the fecal matter in the lower abdomen remained sterile. This seemed an important point in relation to the question of irrigation and drainage; but as it was not known at operation that this matter was sterile, the entire abdominal cavity was thoroughly irrigated, removing pieces of potato and other material, as well as quantities of flocculent lymph; and the abdomen was drained from both wounds. (A culture made a week later from the depths of the upper wound showed the presence of the colon bacillus.) Gastro-enterostomy was not done, as the peritonitis appeared too widespread to make prolongation of the operative justifiable. The patient made an uninterrupted recovery.

DR. JOPSON said, as to mortality, that the percentage of deaths in large series of cases of gastric and duodenal ulcers is not far from 50 per cent., although Moynihan reports twenty-four cases of gastric and duodenal ulcers with nine deaths, a mortality rate of 37.5 per cent. Eliot gives two series, one with gastro-enterostomy, and the other without, with a mortality of 34 per cent. or 35 per cent., being a little less in those cases in which the operation of gastro-enterostomy was not added to that of repair.

While he seldom used lavage in abdominal infections it seemed to him that in cases in which the abdominal cavity is filled with fluid which may be sterile, but is suspicious, it does no harm to replace it with a fluid which is known to be sterile. The procedure cannot spread infection, as the whole abdominal cavity is already involved. When abdominal infection is localized few

irrigate. In perforated gasfric ulcers, however, the conditions are different.

Regarding the performance of gastro-cnterostomy he recalled thc case of a patient under the care of one of the Fellows of this Academy in which perforation occurred and was repaired and thc patient died a few days after of perforation of other ulcers. Unfortunately the surgeon seldom sees these cases within the first few hours, when gastro-cnterostomy would seem safe and easy; and after ten or twelve hours, when there is diffuse infection, one runs greater risks by an extensive and prolonged operation.

CONGENITAL MESENTERIC CYST.

Dr. Harry C. Deaver reportcd the history of a congenital mesenteric cyst, and added a discussion of questions involved in such cases, for which see page 618.

Dr. William M. L. Coplin said that he had not had opportunity to examine many of these cases at autopsy. He had seen Dr. Kalteyer at autopsy at the Philadelphia Hospital remove a chyle cyst; it was an accidental finding at autopsy without clinical data. He had also seen two other chyle cysts which were also accidental findings at autopsy; also serous cysts, one a true mesenteric cyst, the other they were not so certain about. There were peritoneal adhesions and he thought it had resulted from the closure of the serous membrane by adhesions that formed a sac. An epithelial lining would probably interfere with operative recovery. He had seen one of these cysts containing a stone. Therc was the suspicion that it might have been a tuberculous mesenteric lymph-nodc which had been surrounded by lacteal fluid.

OSTEOSARCOMA OF THE MANDIBLE.

Dr. Addinell Hewson reported the history of a case of osteosarcoma of the mandible, with remarks upon the management of such cases, for which see page 614.

GERMAN HOSPITAL SURGICAL CLINICS.

Dr. John B. Deaver presented a report of the work done by him in his Saturday clinic at the German Hospital during 1907–1908.